



# COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Permit No.: VA0063177  
Effective Date: July 12, 2013  
Expiration Date: June 30, 2018

## AUTHORIZATION TO DISCHARGE UNDER THE VIRGINIA POLLUTION DISCHARGE ELIMINATION SYSTEM

AND

## THE VIRGINIA STATE WATER CONTROL LAW

In compliance with the provisions of the Clean Water Act as amended and pursuant to the State Water Control Law and regulations adopted pursuant thereto, the following owner is authorized to discharge in accordance with the information submitted with the permit application, and with this permit cover page, and Parts I and II of this permit, as set forth herein.

Owner: City of Richmond  
Facility Name: Richmond Wastewater Treatment Plant (WWTP)  
City: Richmond  
Facility Location: 1400 Brander Street

The owner is authorized to discharge to the following receiving stream:

Outfall 001  
Name: James River  
Basin: James River (Lower)  
Subbasin: N/A  
Section: 1  
Class: II  
Special Standards: bb

  
Deputy Regional Director, Piedmont Regional Office

12 July 2013  
Date

A. Limitations and Monitoring Requirements

1. During the period beginning with the permit's effective date and lasting until the permit's expiration date or until January 1<sup>st</sup> the year following the issuance of the final Certificate to Operate (CTO) for the new nutrient removal technology associated with the Certificates to Construct issued to Contracts 1 through 5 (PTL Numbers: 24093, 24663, 24316, 24664, 25104), whichever event occurs first, the permittee is authorized to discharge from Outfall 001.

- a. Such discharges shall be limited and monitored specified below:

EFFLUENT CHARACTERISTICS		DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS <sup>(8)</sup>		
		MONTHLY AVERAGE		7-DAY ROLLING AVERAGE*		MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
Flow (MGD) <sup>(1)</sup>		NL		NA		NA	NL	Continuous	Totalizing, Indicating & Recording
pH (standard units)		NA		NA		6.0	9.0	1/Day	Grab
Five Day Carbonaceous Biochemical Oxygen Demand (cBOD <sub>5</sub> ) <sup>(5)</sup>	June – October	NL mg/L	NL kg/d	8.0 mg/L	1361 kg/d	NA	NA	1/Day	24 HC
	November – May	14.3 mg/L	2434 kg/d	21.4 mg/L	3651 kg/d				
Total Suspended Solids (TSS) <sup>(5)</sup>	June – October	NL mg/L	NL kg/d	10 mg/L <sup>(6)</sup>	1703 kg/d	NA	NA	1/Month	24 HC
	November – May	18 mg/L	3066 kg/d	27 mg/L	4599 kg/d				
Ammonia as N <sup>(5)</sup>	June – October	6.4 mg/L	1090 <sup>(7)</sup> kg/d	9.36 mg/L (Weekly Average)		NA	NA	1/Day	24 HC
	November – May	15.2 mg/L	2588 kg/d	22.8 mg/L (Weekly Average)					
Total Phosphorus (as P) <sup>(2) (5)</sup>		2.0 mg/L	NL kg/d	NA		NA	NA	3 Days/Week	24 HC
Dissolved Oxygen		NA		NA		5.6 mg/L	NA	1/Day	Grab
<i>E. coli</i> <sup>(3)</sup>		126 N/100mL (Geometric Mean)		NA		NA	NL	1/Day	Grab (between 7:30 am-1:30pm)

- b. There shall be no discharge of floating solids or visible foam in other than trace amounts.
- c. In addition to any Total Nitrogen or Total Phosphorus concentration limits (or monitoring requirements without associated limits) listed above, this facility has Total Nitrogen and Total Phosphorus calendar year load limits associated with this outfall included in the current Registration List under registration number VAN040085, enforceable under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Dischargers and Nutrient Trading in the Chesapeake Watershed in Virginia.

2. During the period beginning with January 1<sup>st</sup> of the year following the issuance of the final Certificate to Operate (CTO) for the new nutrient removal technology associated with the Certificates to Construct issued to Contracts 1 through 5 (PTL Numbers: 24093, 24663, 24316, 24664, 25104) and lasting until the permit's expiration date, the permittee is authorized to discharge from Outfall 001.

- a. Such discharges shall be limited and monitored as specified below:

EFFLUENT CHARACTERISTICS		DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS <sup>(8)</sup>		
		MONTHLY AVERAGE		7-DAY ROLLING AVERAGE*		MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
Flow (MGD) <sup>(1)</sup>		NL		NA		NA	NL	Continuous	Totalizing, Indicating & Recording
pH (standard units)		NA		NA		6.0	9.0	1/Day	Grab
Five Day Carbonaceous Biochemical Oxygen Demand (cBOD <sub>5</sub> ) <sup>(5)</sup>	June – October	NL mg/L	NL kg/d	8.0 mg/L	1361 kg/d	NA	NA	1/Day	24 HC
	November – May	14.3 mg/L	2434 kg/d	21.4 mg/L	3651 kg/d				
Total Suspended Solids (TSS) <sup>(5)</sup>	June – October	NL mg/L	NL kg/d	10 mg/L <sup>(6)</sup>	1703 kg/d	NA	NA	1/Month	24 HC
	November – May	18 mg/L	3066 kg/d	27 mg/L	4599 kg/d				
Ammonia as N <sup>(5)</sup>	June– October	6.4 mg/L	1090 kg/d <sup>(7)</sup>	9.36 mg/L (Weekly Average)		NA	NA	1/Day	24 HC
	November – May	15.2 mg/L	2588 kg/d	22.8 mg/L (Weekly Average)					
Total Phosphorus (as P) - Calendar Year Average <sup>(2) (5)</sup>		0.50 mg/L		NA		NA	NA	1/Year	Calculated
Total Nitrogen (as N)– Calendar Year Average <sup>(2) (4) (5)</sup>		8.0 mg/L		NA		NA	NA	1/Year	Calculated
Total Phosphorus (as P) – Calendar Year to Date Average <sup>(2)</sup>		NL		NA		NA	NA	1/Month	Calculated
Total Nitrogen (as N)– Calendar Year to Date Average <sup>(2) (4)</sup>		NL		NA		NA	NA	1/Month	Calculated
Dissolved Oxygen		NA		NA		5.6 mg/L	NA	1/Day	Grab
<i>E.coli</i> <sup>(3)</sup>		126 N/100mL (Geometric Mean)		NA		NA	NL	1/ Day	Grab (between 7:30 am-1:30pm)

- b. There shall be no discharge of floating solids or visible foam in other than trace amounts.

- c. In addition to any Total Nitrogen or Total Phosphorus concentration limits (or monitoring requirements without associated limits) listed above, this facility has Total Nitrogen and Total Phosphorus calendar year load limits associated with this outfall included in the current Registration List under registration number VAN040085, enforceable under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Dischargers and Nutrient Trading in the Chesapeake Watershed in Virginia.

NOTES & FOOTNOTES: (applicable to Parts I.A.1 and 2):

"NL" means no limitation is established. Monitoring and reporting, however, are required.

"NA" means not applicable.

"24 HC" means twenty-four hour composite.

\* "7-Day Rolling Average" is defined in Part I.C.6.b.

- (1) The dry-weather design flow of this treatment facility is 45 MGD.
- (2) See Part I.C 11 and 12 for nutrient reporting requirements.
- (3) See Part I.B for alternate disinfection requirements.
- (4) Total Nitrogen, which is the sum of TKN and Nitrate plus Nitrite, shall be derived from the results of those tests.
- (5) This facility shall comply with all of the discharge limitations listed above when treating a dry-weather flow up to 45 MGD. This facility shall comply with all of the discharge concentration limitations when treating a combination of dry-weather flow and stormwater at flows of up to 75 MGD. In the event that concentration and/or loading limitations are met without regard to the flow tiering, then the facility will be considered to be in compliance with the applicable limitation. This facility shall comply with all of the discharge limitations listed above for TRC, Dissolved Oxygen, pH, and *E. coli* regardless of flow. Dry-weather flow = Total sanitary sewage, industrial wastewater, and Infiltration/Inflow.
- (6) This limitation is expressed in two significant digits.
- (7) This limitation is expressed in four significant digits.
- (8) Effluent samples shall be collected immediately following treatment and disinfection.

3. Discharge from Outfall 041 to the James River is approved as a CSO-related bypass, provided the permittee is in compliance with the Long Term Control Plan (LTCP) implementation schedule requirements of the March 17, 2005 Consent Order, and any supplements or modifications thereto and subject to the following conditions, discharge limitations and monitoring requirements. Beginning from the effective date of this permit and lasting through the expiration date, influent flow discharged from Outfall 041 shall receive at a minimum treatment as follows: screening, grit removal, primary sedimentation and disinfection.

- a. Such discharges shall be monitored as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS <sup>(3)</sup>		
	MONTHLY AVERAGE		WEEKLY AVERAGE		MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE <sup>(4)</sup>
Flow (MGD) <sup>(1)</sup>	NL		NA		NA	NL	Continuous	Totalizing, Indicating & Recording
pH (standard units)	NA		NA		NL	NL	1/Day	Grab
Five Day Carbonaceous Biochemical Oxygen Demand (cBOD <sub>5</sub> )	NL mg/L	NL kg/d	NL mg/L	NL kg/d	NA	NA	1/Day	Composite <sup>(2)</sup>
Total Suspended Solids (TSS)	NL mg/L	NL kg/d	NL mg/L	NL kg/d	NA	NA	1/Month	Composite <sup>(2)</sup>
Ammonia as N	NL mg/L	NL kg/d	NL mg/L		NA	NA	1/Day	Composite <sup>(2)</sup>
Total Phosphorus (as P)	NL mg/L		NA		NA	NA	1/Month	Calculated
Total Nitrogen (as N)	NL mg/L		NA		NA	NA	1/Month	Calculated
E.coli	NL N/100mL (Geometric Mean)		NA		NA	NL	1/ Day	Grab

"NL" means no limitation is established. Monitoring and reporting, however, are required.

"NA" means not applicable.

(1) Conditions and limitations for Influent Flow discharged from Outfall 041 shall be as follows:

FLOW CONDITION AND PERIOD		TIMES	MEASURED FLOW RATES FOR OUTFALL 041
Dry Weather Flow (Influent Flow $\leq$ 45 MGD)		All times	No discharge permitted. Complete treatment required for all influent.
Wet Weather Flow ( $45 \leq$ Influent Flow $\leq$ 75* MGD)		All times	No discharge permitted. Complete treatment required for all influent.
Wet Weather Flow (Influent Flow $\geq$ 75* MGD) during wet weather events. Flow emptied from retention basins is not authorized to be discharged through this outfall.	Before the final CTO is issued for the CSO-related Bypass Treatment (Demonstration Testing)	All times	Up to 37.5 MGD. Total influent flow to the plant shall be authorized up to 112.5 MGD.
	After the final CTO is issued for the CSO-related Bypass Treatment.		Up to 65 MGD. Total influent flow to the plant shall be authorized up to 140 MGD.

\* The 75 MGD threshold applies during normal operating conditions. See Part I.H.1.d.2.iii for the definition of abnormal conditions, under which the 75 MGD threshold may be adjusted.

- (2) Collect one grab sample every two hours and flow composite samples during each calendar day discharge.
  - (3) Effluent samples shall be collected following the CSO-related bypass disinfection.
  - (4) All pollutant sampling shall commence no later than two hours after a discharge has begun to occur at Outfall 041. Samples are not required for discharges lasting less than two hours. The two hour delay does not apply to flow monitoring.
- b. The permittee shall submit a log with each monthly Discharge Monitoring Report that identifies all days in which a CSO-related bypass occurred.
  - c. The permittee shall evaluate performance of this CSO control method in accordance with Part I.H.1.d.(4).

4. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to manage sewage sludge according to the approved Sludge Management Plan. The pollutants in the sewage sludge shall be limited and monitored as specified below:
- a. Annual Sludge Production Data  
Report annual total amount of sludge produced, in dry metric tons, including units and annual amount of sludge used or disposed in various methods.
  - b. Chemical Pollutant Limitations

SLUDGE CHARACTERISTICS	LIMITATIONS		MONITORING REQUIREMENTS	
	MONTHLY AVERAGE * (mg/kg)	CEILING CONCENTRATION * MAXIMUM (mg/kg)	FREQUENCY	SAMPLE TYPE
Percent Solids	NL	NA	1/2Months	Composite
Total Arsenic	41	75	1/2Months	Composite
Total Cadmium	39	85	1/2Months	Composite
Total Copper	1,500	4,300	1/2Months	Composite
Total Lead	300	840	1/2Months	Composite
Total Mercury	17	57	1/2Months	Composite
Total Molybdenum	NA	75	1/2Months	Composite
Total Nickel	420	420	1/2Months	Composite
Total Selenium	100	100	1/2Months	Composite
Total Zinc	2,800	7,500	1/2Months	Composite

NL = No Limitation, monitoring only

NA = Not Applicable

\* Dry Weight Basis

"1/2 Month" means one sample taken during each two consecutive calendar month period following the effective date of the permit

- c. Pathogen Reduction Limitations  
Class B Alternative 2, Anaerobic Digestion – Sewage sludge shall be treated in the absence of air for a specific mean cell residence time at a specific temperature. Values for the mean cell residence time and temperature shall be between 15 days at 35°C to 55°C and 60 days at 20°C.
- d. Vector Attraction Reduction Limitations  
Option 1, VSS Reduction – The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38%.
- e. See Parts I.F and G for record keeping and reporting requirements.

**B. Alternate Disinfection Limitations and Monitoring Requirements**

1. If chlorine is chosen as a disinfection method, total residual chlorine (TRC) shall be limited and monitored by the permittee as specified below:
  - a. The permittee shall monitor the TRC at the outlet of each operating chlorine contact tank every two hours by grab sample.
  - b. No more than **36** of all samples taken at the outlet of each operating chlorine contact tank shall be less than **1.0 mg/L** for any one calendar month (DMR parameter 157).
  - c. No TRC sample collected at the outlet of each operating chlorine contact tank shall be less than **0.60 mg/L** (DMR parameter 213) unless the *E. coli* in the final effluent is also less than 126 N/100mL. When the TRC concentration after the contact tank and prior to dechlorination is less than 0.60 mg/L, an *E. coli* sample of the final effluent may be taken within 15 minutes. If the *E. coli* sample is taken within fifteen minutes and is less than 126 N/100 mL, then the original TRC samples shall not be reported as one of the 36 allowable excursions identified in B.1.b above.
  - d. If dechlorination facilities exist the samples above shall be collected prior to dechlorination.
2. If chlorine is chosen as a disinfection method, effluent TRC shall be limited and monitoring, following dechlorination, by the permittee as specified below:

	<b>Monthly Average</b>	<b>Weekly Average</b>	<b>Frequency</b>	<b>Sample Type</b>
TRC (mg/L)	36 µg/L	38 µg/L	1 per 2 hours	Grab (between 7:30 am-1:30 pm)

**C. Other Requirements or Special Conditions**

1. The permittee shall maintain a current Operations and Maintenance (O&M) Manual for the treatment works that is in accordance with Virginia Pollutant Discharge Elimination System Regulations, 9VAC25-31 and (for sewage treatment plants) Sewage Collection and Treatment Regulations, 9VAC25-790.

The O&M Manual and subsequent revisions shall include the manual effective date and meet Part II.K.2 and Part II.K.4 Signatory Requirements of the permit. Any changes in the practices and procedures followed by the permittee shall be documented in the O&M Manual within 90 days of the effective date of the changes. The permittee shall operate the treatment works in accordance with the O&M Manual and shall make the O&M manual available to Department personnel for review during facility inspections. Within 30 days of a request by DEQ, the current O&M Manual shall be submitted to the DEQ Regional Office for review and approval.

The O&M manual shall detail the practices and procedures which will be followed to ensure compliance with the requirements of this permit. This manual shall include, but not necessarily be limited to, the following items, as appropriate:

- a. Permitted outfall locations and techniques to be employed in the collection, preservation, and analysis of effluent, storm water and sludge samples;
- b. Procedures for measuring and recording the duration and volume of treated wastewater discharged;
- c. Discussion of Best Management Practices, if applicable;
- d. Procedures for handling, storing, and disposing of all wastes, fluids, and pollutants characterized in Part I.C.7 that will prevent these materials from reaching state waters. List type and quantity of wastes, fluids, and pollutants (e.g. chemicals) stored at this facility;
- e. Discussion of treatment works design, treatment works operation, routine preventative maintenance of units within the treatment works, critical spare parts inventory and record keeping;
- f. Plan for the management and/or disposal of waste solids and residues;
- g. Hours of operation and staffing requirements for the plant to ensure effective operation of the treatment works and maintain permit compliance;
- h. List of facility, local and state emergency contacts; and,
- i. Procedures for reporting and responding to any spills/overflows/treatment works upsets.



2. The permittee shall employ or contract at least one Class I licensed wastewater works operator for this facility. The license shall be issued in accordance with Title 54.1 of the Code of Virginia and the regulations of the Board for Waterworks and Wastewater Works Operators and Onsite Sewage System Professionals. The permittee shall notify the Department in writing whenever he is not complying, or has grounds for anticipating he will not comply with this requirement. The notification shall include a statement of reasons and a prompt schedule for achieving compliance.
3. The permitted treatment works shall meet Reliability Class I.
4. The permittee shall conduct all sewage sludge use or disposal activities in accordance with the Sludge Management Plan (SMP) approved with the issuance of this permit. Any proposed changes in the sewage sludge use or disposal practices or procedures followed by the permittee shall be documented and submitted for DEQ approval 90 days prior to the effective date of the changes. Upon approval, the revised SMP becomes an enforceable part of the permit. The permit may be modified or alternatively revoked and reissued to incorporate limitations or conditions necessitated by substantive changes in sewage sludge use or disposal practices.
5. The Board may promptly modify or revoke and reissue this permit if any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the Clean Water Act is more stringent than any requirements for sludge use or disposal in this permit, or controls a pollutant or practice not limited in this permit.
6. Compliance Reporting
  - a. The quantification levels (QLs) shall be less than or equal to the following concentrations:

<u>Effluent Characteristic</u>	<u>Quantification Level</u>
cBOD <sub>5</sub>	2 mg/L
TSS	1.0 mg/L
Ammonia as N	0.20 mg/L
TRC	0.10 mg/L (100 µg/L)

The QL is defined as the lowest concentration used to calibrate a measurement system in accordance with the procedures published for the method. It is the responsibility of the permittee to ensure that proper quality assurance/quality control (QA/QC) protocols are followed during the sampling and analytical procedures. QA/QC information shall be documented to confirm that appropriate analytical procedures have been used and the required QLs have been attained. The permittee shall use any method in accordance with Part II A of this permit.

b. Reporting

Monthly Average -- Compliance with the monthly average limitations and/or reporting requirements for the parameters listed in subsection a. of this permit condition shall be determined as follows: All concentration data below the QL used in the analysis shall be treated as zero. All concentration data equal to or above the QL used in the analysis shall be treated as it is reported. An arithmetic average shall be calculated using all reported data for the month, including the defined zeros. This arithmetic average shall be reported on the Discharge Monitoring Report (DMR) as calculated. If all data are below the QL used for the analysis, then the average shall be reported as "<QL". If reporting for quantity is required on the DMR and the reported monthly average concentration is <QL, then report "<QL" for the quantity. Otherwise use the reported concentration data (including defined zeros) and flow data for each sample day to determine the daily quantity and report the average of the calculated daily quantities.

Weekly Average -- Compliance with the weekly average limitations and/or reporting requirements for the parameters listed in subsection a. of this permit condition shall be determined as follows: All concentration data below the QL used in the analysis shall be treated as zero. All concentration data equal to or above the QL used in the analysis shall be treated as reported. An arithmetic average shall be calculated using all reported data, including the defined zeros, collected within each complete calendar week and entirely contained within the reporting month. The maximum value of the weekly averages thus determined shall be reported on the DMR. If all data are below the QL used for the analysis, then the weekly average shall be reported as "<QL". If reporting for quantity is required on

the DMR and the reported weekly average concentration is <QL, then report "<QL" for the quantity. Otherwise use the reported concentration data (including the defined zeros) and flow data for each sample day to determine the daily quantity and report the maximum weekly average of the calculated daily quantities.

7-Day Rolling Average -- Compliance with the 7-Day Rolling average limitations and/or reporting requirements for the parameters listed in subsection a. of this permit condition shall be determined as follows: All concentration data below the QL used in the analysis shall be treated as zero. All concentration data equal to or above the QL used in the analysis shall be treated as reported. An arithmetic average shall be calculated using all reported data, including the defined zeros, collected within each seven day period (except when  $Q_D > 75$  MGD). The maximum value of the 7-Day Rolling averages thus determined shall be reported on the DMR. If all data are below the QL used for the analysis, then the 7-Day Rolling average shall be reported as "<QL". If reporting for quantity is required on the DMR and the reported 7-Day Rolling average concentration is <QL, then report "<QL" for the quantity. Otherwise, use the reported concentration data (including the defined zeros) and flow data for each sample day (except when  $Q_D > 45$  MGD) to determine the daily quantity and report the maximum 7-Day Rolling average of the calculated daily quantities.

$Q_D \leq 45$  MGD = Total mass for any calendar day summed with the preceding six calendar days (with flow less than or equal to 45 MGD) divided by seven.

$Q_D \leq 75$  MGD = Average daily concentration for any calendar day summed with the preceding six calendar days (with flow less than or equal to 75 MGD) divided by seven.

where  $Q_D$  = Daily Flow

Flow tiered 7-Day Rolling Averages calculated in accordance with directions above shall not include data from more than two consecutive months. If seven days within the flow tier are not available over the two consecutive month period, then sum the data from the available days within the flow tier and divide by the number of applicable calendar days. If available, seven calendar days shall be included in all 7-Day Rolling Averages. For calendar days with flow greater than 45 MGD, the 7-Day Rolling Average mass is not calculated. For calendar days above 75 MGD, the 7-Day Rolling Average concentration is not calculated.

- c. Any single datum required shall be reported as "<QL" if it is less than the QL used in the analysis. Otherwise the numerical value shall be reported.
  - d. The permittee shall report at least the same number of significant digits as the permit limit for a given parameter. Regardless of the rounding convention used (i.e. 5 always rounding up or to the nearest even number) by the permittee, the permittee shall use the convention consistently and shall ensure that consulting laboratories employed by the permittee use the same convention.
  - e. The compliance reporting calculations outlined in I.C.6.b shall apply only to parameters not addressed in I.C.11, Nutrient Reporting Calculations.
7. Any and all product, materials, industrial wastes, and/or other wastes resulting from the purchase, sale, mining, extraction, transport, preparation, and/or storage of raw or intermediate materials, final product, by-product or wastes, shall be handled, disposed of, and/or stored in such a manner and consistent with Best Management Practices so as not to permit a discharge of such product, materials, industrial wastes, and/or other wastes to State waters, except as expressly authorized.
  8. This permit may be modified or, alternatively, revoked and reissued:
    - a. If any approved wasteload allocation procedure, pursuant to Section 303(d) of the Clean Water Act, imposes wasteload allocations, limits or conditions on the facility that are not consistent with the permit requirements;
    - b. To incorporate technology-based effluent concentration limitations for nutrients in conjunction with the installation of nutrient control technology, whether by new construction, expansion or upgrade, or

- c. To incorporate alternative nutrient limitations and/or monitoring requirements, should:
  - (1) the State Water Control Board adopt new nutrient standards for the water body receiving the discharge, including the Chesapeake Bay or its tributaries, or
  - (2) a future water quality regulation or statute require new or alternative nutrient control.
- 9. The permittee shall provide adequate notice to the Department of the following:
  - a. Any new introduction of pollutants into the treatment works from an indirect discharger which would be subject to Section 301 or 306 of the Clean Water Act and the State Water Control Law if it were directly discharging those pollutants; and
  - b. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of this permit.

Adequate notice shall include information on (i) the quality and quantity of effluent introduced into the treatment works, and (ii) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the treatment works.

- 10. The permittee shall, in accordance with the DEQ Sewage Collection and Treatment Regulation (9VAC 25-790), obtain a Certificate to Construct (CTC), and a Certificate to Operate (CTO) from the DEQ Office of Wastewater Engineering (for Water Quality Improvement Funded (WQIF) projects) or submitted by the design engineer and owner to the DEQ regional water permit manager (for non WQIF projects) prior to constructing wastewater treatment works and operating the treatment works, respectively. Non-compliance with the CTC or CTO shall be deemed a violation of the permit. Upon issuance of a CTO, any nutrient removal facilities installed shall be operated to achieve design effluent Total Nitrogen and Total Phosphorus concentrations.
- 11. Nutrient Reporting Calculations  
The reporting calculations below shall be performed using the concentration monitoring required by the general permit, VAN040085.

For each calendar month, the DMR shall show the calendar year-to-date average concentration (mg/L) calculated in accordance with the following formulae:

$$AC_{avg-YTD} = ( \sum_{(Jan-current\ month)} MC_{avg} ) \div ( \# \text{ of months} )$$

where:

$AC_{avg-YTD}$  = calendar year-to-date average concentration (mg/L)(parameter codes 805 and 806)

$MC_{avg}$  = monthly average concentration (mg/L) as reported on the Nutrient General Permit DMR

The total nitrogen and phosphorus average concentrations (mg/L) for each calendar year (AC) shall be shown on the December DMR due January 10<sup>th</sup> of the following year. These values shall be calculated in accordance with the following formulae:

$$AC_{avg} = ( \sum_{(Jan-Dec)} MC_{avg} ) \div 12$$

where:

$AC_{avg}$  = calendar year average concentration (mg/L) (parameter codes 792 and 794)

$MC_{avg}$  = monthly average concentration (mg/L) as reported on the Nutrient General Permit DMR

For Total Phosphorus, all daily concentration data below the quantification level (QL) for the analytical method used should be treated as half the QL. All daily concentration data equal to or above the QL for the analytical method used shall be treated as it is reported.

For Total Nitrogen (TN), if none of the daily concentration data for the respective species (i.e., TKN, Nitrates/Nitrites) are equal to or above the QL for the respective analytical methods used, the daily TN concentration value reported shall equal one half of the largest QL used for the respective species. If one of the data is equal to or above the QL, the daily TN concentration value shall be treated as that data point

is reported. If more than one of the data is above the QL, the daily TN concentration value shall equal the sum of the data points as reported.

12. The annual average concentration limitations for Total Nitrogen and/or Total Phosphorus are suspended during any calendar year in which the facility is considered by DEQ to be a participant in the Virginia Environmental Excellence Program in good standing at either the Exemplary Environmental Enterprise (E3) level or the Extraordinary Environmental Enterprise (E4) level, provided that the following conditions have also been met:
  - a. The facility has applied for (or renewed) participation, been accepted, maintained a record of sustained compliance and submitted an annual report according to the program guidelines;
  - b. The facility has demonstrated that they have in place a fully implemented environmental management system (EMS) with an alternative compliance method that includes operation of installed nutrient removal technologies to achieve the annual average concentration limitations, and
  - c. The E3/E4 designation from DEQ and implementation of the EMS has been in effect for the full calendar year.

The annual average concentration limitations for Total Nitrogen and/or Phosphorus, as applicable, are not suspended in any calendar year following a year in which the facility failed to achieve the annual average concentration limitations as required by b. above.

13. When the city identifies the need to maintain any retention basin, a request shall be submitted to the DEQ – Piedmont Regional Office to temporarily isolate the retention basin from the sewer system. The request shall be submitted 60 days prior to the proposed start date. The request shall include:
  - a. Proposed start date for isolating the basin
  - b. Estimated time to maintain the retention basin

Every effort shall be made to select a period for maintenance that will minimize potential bypass of the basin during wet weather flow. The city shall notify the regional office in writing of bypasses occurring during the operation and upon completion of the maintenance operation.

14. If the permittee plans an expansion or upgrade to replace the existing treatment works, or if facilities are permanently closed, the permittee shall submit to the DEQ-PRO a closure plan for the existing treatment works. The plan shall address the following information as a minimum: verification of elimination of sources and/or alternate treatment scheme; treatment, removal and final disposition of residual wastewater and solids; removal/demolition/disposal of structures, equipment, piping and appurtenances; site grading, and erosion and sediment control; restoration of site vegetation; access control; fill materials; and proposed land use (post-closure) of the site. The plan should contain proposed dates for beginning and completion of the work. The plan must be approved by the DEQ-PRO prior to implementation.
15. Should effluent monitoring indicate the need for any water quality-based limitations, this permit may be modified or alternatively revoked and reissued to incorporate appropriate limitations.

#### D. Pretreatment Program

The permittee's pretreatment program has been approved. The program is an enforceable part of this permit. The permittee shall:

1. Implement a pretreatment program that complies with the Clean Water Act, Water Control Law, State regulations and the approved program.
2. Submit to the DEQ Piedmont Regional Office an annual report that describes the permittee's program activities over the previous year. The annual report shall be submitted no later than January 31 of each year and shall include:

- a. An updated list of the Significant Industrial Users\* (SIUs) noting all of the following:
    - (1) facility address (mailing and physical), phone and contact name, title and email;
    - (2) explanation of SIUs deleted from the previous year's list;
    - (3) identify which Industrial Users (IUs) are subject to Categorical Standards and note which Standard (i.e. metal finishing);
    - (4) specify which 40 CFR part(s) is/are applicable;
    - (5) indicate which IUs are subject to local standards that are more stringent than Categorical Pretreatment Standards;
    - (6) indicate which IUs are subject only to local requirements;
    - (7) identify which IUs are subject to Categorical Pretreatment Standards that are subject to reduced reporting requirements under 9 VAC 25-31-840 E.3;
    - (8) identify which IUs are non-significant Categorical Industrial Users;
    - (9) applicable Standard Industrial Classification (SIC) and North American Industry Classification System (NAICS) codes;
  - b. A summary of the compliance status of each Significant Industrial User with pretreatment standards and permit requirements.
  - c. A summary of the number and types of Significant Industrial User sampling and inspections performed by the Publically Owned Treatment Works (POTW).
  - d. All information concerning any interference, upset, VPDES permit or Water Quality Standards violations directly attributable to Significant Industrial Users and enforcement actions taken to alleviate said events.
  - e. A description of all enforcement actions taken against Significant Industrial Users during the reporting period.
  - f. A summary of any changes to the submitted pretreatment program that have not been previously reported to the DEQ Piedmont Regional Office.
  - g. A summary of the permits issued to Significant Industrial Users since the last annual report.
  - h. POTW and self-monitoring results for Significant Industrial Users determined to be in significant non-compliance during the reporting period.
  - i. Results of the POTW's influent/effluent/sludge sampling, not previously submitted to DEQ.
  - j. Copies of newspaper publications of all Significant Industrial Users in significant non-compliance that are published during the reporting period.
  - k. Signature of an authorized representative.
3. Submit any changes to the approved pretreatment program to the DEQ Piedmont Regional Office and obtain approval before implementation of the changes.
  4. Ensure all Significant Industrial Users' permits are issued and reissued in a timely manner and that the Significant Industrial User permits issued by the POTW are effective and enforceable.
  5. Inspect and sample all Significant Industrial Users at a minimum of once a year.
    - a. Sampling shall include all regulated parameters, and shall be representative of the wastewater discharged. All Significant Industrial Users requiring sampling shall be sampled at the end of any categorical process or at the entrance to the treatment works.
    - b. Inspection of the Significant Industrial Users shall cover all areas which could result in wastewater discharge to the treatment works including manufacturing, chemical storage, pretreatment facilities, spill prevention and control procedures, hazardous waste generation and Significant Industrial User's self monitoring and records.

- c. If an industry claims a no discharge status, a certification of the no discharge status shall be submitted to the Control Authority 30 days following the status change; within 90 days of receiving the no discharge status certification, the Control Authority shall terminate the pretreatment permit or modify the pretreatment permit to incorporate a clause ensuring that the Control Authority receives timely and proper notification in the event of an episodic or unforeseen discharge to the POTW. This notification shall allow sampling to occur if the industrial user discharges to the Control Authority; additionally, the modified permit shall include a requirement to notify the Control Authority 90 days prior to reverting from a no discharge status to a discharging status. Documentation to support the disposition of waste or wastewater shall be available to the Control Authority or Approval Authority upon request or during inspections. The no discharge status certification shall be submitted annually to the Control Authority. The status of the no discharge industries shall be reported with the supporting information in the Control Authority's annual report. This certification may satisfy the sampling requirements of Part I.D.5.a above.
6. Implement the reporting requirements of Part VII of the VPDES Permit Regulation.
7. Review the existing Enforcement Response Plan (ERP) to ensure it meets state and federal regulatory requirements and notify the DEQ Piedmont Regional Office, in writing within 90 days of the effective date of this permit, whether it is still accurate and complete. If the ERP is no longer accurate and complete, a revised ERP shall be submitted for approval to the DEQ Piedmont Regional Office within 90 days of the effective date of this permit. The approved ERP is an enforceable part of this permit and shall be implemented.
8. Develop local limits or reevaluate local limits using current influent, effluent and sludge monitoring data and submit the data and results of the evaluation to the DEQ Piedmont Regional Office within one year following the effective date of this permit.
9. Ensure that adequate resources are available to implement the approved program.
10. Meet all public participation requirements and annually public notice Significant Industrial Users in significant non-compliance with pretreatment standards and requirements for the previous 12 months, or since publication of the previous annual public notice, whichever is longer.
11. Within 180 days of the effective date of this permit, submit to the DEQ Piedmont Regional Office a survey of all Industrial Users discharging to the POTW. The information shall be submitted on the DEQ's Discharger Survey Form or an equivalent form that includes the quantity and quality of the wastewater. Survey results shall include the identification of significant industrial users of the POTW. In lieu of the survey, the permittee may elect to develop, submit for DEQ Piedmont Regional Office approval, and implement a plan to survey (using internal work processes and systems controls), on pre-established intervals throughout the term of this permit, the industrial community in their jurisdiction; if an alternative plan is developed, the permittee shall submit the plan to the DEQ Piedmont Regional Office for approval 90 days after the effective date of this permit.
12. The DEQ may require the POTW to institute changes to its pretreatment program:
  - a. If implementation of the approved program is determined by DEQ to not meet the requirements of the Clean Water Act, Water Control Law or State regulations;
  - b. If problems such as pass-through, interference, water quality standards violations or sludge contamination develop or continue; or
  - c. If federal, state or local requirements change.

\*A significant industrial user is one that:

- a. Has an average flow of 25,000 gallons or more per workday of process (\*\*) wastewater;
- b. Contributes a process waste stream which makes up 5.0-percent or more of the average dry weather hydraulic or organic capacity of the POTW;

- c. Is subject to the categorical pretreatment standards; or
- d. Has significant impact, either singularly or in combination with other Significant Dischargers, on the treatment works or the quality of its effluent.

\*\*Excludes sanitary, non-contact cooling water and boiler blowdown

E. Whole Effluent Toxicity (WET) Monitoring Program

1. Biological Monitoring

- a. In accordance with the schedule in Part I.E.2 below, the permittee shall perform annual chronic toxicity testing on Outfall 001 using 24-hour flow-proportioned composite samples for the duration of the permit. The chronic tests to use are:

Chronic 3-Brood Survival and Reproduction Static Renewal Test with *Ceriodaphnia dubia*

Chronic 7-Day Survival and Growth Static Renewal Test with *Pimephales promelas*

These chronic tests shall be conducted in such a manner and at sufficient dilutions (minimum of five dilutions, derived geometrically) to determine the "No Observed Effect Concentration" (NOEC) for survival and reproduction or growth. Results which cannot be quantified (i.e., a "less than" NOEC value) are not acceptable, and a retest will have to be performed. A retest of a non-acceptable test must be performed during the same compliance period as the test it is replacing. Express the test NOEC as TUc (Chronic Toxic Units), by dividing 100/NOEC for DMR reporting. Report the LC<sub>50</sub> at 48 hours and the IC<sub>25</sub> with the NOEC's in the test report.

- b. The test dilutions should be able to determine compliance with the following endpoint(s):  
Outfall 001  
Chronic NOEC  $\geq$  8.0 %, equivalent to a TUc  $\leq$  12.5%
- c. The permittee may provide additional samples to address data variability. These data shall be reported and may be included in the evaluation of effluent toxicity. Test procedures and reporting shall be in accordance with the WET testing methods cited in 40 CFR 136.3.
- d. The test data will be evaluated by DEQ for reasonable potential at the conclusion of the test period. The data may be evaluated sooner if requested by the permittee, or if toxicity has been noted. Should DEQ evaluation of the data indicate that a limit is needed, the permit may be modified or, alternatively, revoked and reissued to include a WET limit and compliance schedule. Following written notification from DEQ of the need for including a WET limitation, the toxicity tests of Part I.E.1.a. may be discontinued.
- e. The permit may be modified or revoked and reissued to include pollutant specific limits in lieu of a WET limit should it be demonstrated that toxicity is due to specific parameters. The pollutant specific limits must control the toxicity of the effluent.

2. Reporting Schedule

The permittee shall submit the toxicity test reports with the DMR for the tests specified in accordance with the following schedule:

<u>Period</u>	<u>Compliance Date</u>	<u>Submittal Date</u>
Annual 1	By 12/31/2013	By 01/10/2014
Annual 2	By 12/31/2014	By 01/10/2015
Annual 3	By 12/31/2015	By 01/10/2016
Annual 4	By 12/31/2016	By 01/10/2017
Annual 5	By 12/31/2017	By 01/10/2018

F. Record Keeping Special Conditions for Land Application of Sewage Sludge

The permittee is required to retain the following information for at least 5 years:

- 1. The concentrations of each pollutant in Part I.A.4;

2. A description of how the pathogen reduction requirements in Part I.A.4.c. are met;
3. A description of how the vector attraction reduction requirements in Part I.A.4.d. are met;
4. A description of how the management practices, specified in the approved Sludge Management Plan and/or this permit, are met;
5. A description of how the site restrictions specified in the approved Sludge Management Plan and/or this permit, are met;
6. The following certification statement:  
"I certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements in 9 VAC 25-31-710 B, vector attraction reduction requirements in 9 VAC 25-31-720 B 2, the management practices in 9 VAC 25-31-550, and the site restrictions in 9 VAC 25-31-710 B 5 was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment".

G. Reporting Requirements for Land Application of Sewage Sludge

The permittee shall provide the results of all monitoring performed in accordance with Part I.A.4 and F, and information on management practices, land application sites, site restrictions (if applicable), and appropriate certifications not later than February 19 of each year to the regional office of the Department of Environmental Quality. Each report is for the previous calendar year's activity. If no sewage sludge was applied to the land during the reporting period, "no sewage sludge was applied" shall be reported.

H. Combined Sewer System

The permittee operates a Combined Sewer System (CSS). The CSS includes combined sewer overflow (CSO) outfalls (Outfalls 002-007, 009-021, 024-026, 028, 031, 033-035, 039, 040; see Attachment A). During the period beginning with the permit effective date and lasting until the permit expiration date, the permittee is authorized to discharge from the CSO outfalls listed in Attachment A. Such discharges shall be limited and conditioned by the permittee as specified in the following paragraphs.

The permittee has implemented CSO control measures in accordance with previous permits and consent order agreements issued by the Board. Continued operation of these CSO control measures along with adherence to the Nine Minimum Controls outlined below, will constitute continued compliance with the technology based components of the National CSO Policy. Consistent with the CWA Section 301(b)(1)(C), the permittee must not discharge in excess of any limitation necessary to meet water quality standards established pursuant to State law. The Board has determined that the requirements outlined below constitute BCT/BAT/BPJ for the CSS and are limitations necessary to meet water quality standards.

1. Nine Minimum Controls

The permittee has implemented measures throughout the CSS to meet the technology-based requirements (nine minimum controls) of EPA's Combined Sewer Overflow (CSO) Policy, April 1994 and incorporated into the Clean Water Act pursuant to the Wet Weather Water Quality Act, Section 402(q) of the Clean Water Act, 33 U.S.C. §1342. The permittee shall continue to implement documented activities, procedures, management practices and operations related to the CSS as follows:

a. Operation and Maintenance

- (1) Inspect and preventatively maintain CSS control structures (e.g. regulators and tide gates) at least once per month.
- (2) Inspect, remove screenings and preventatively maintain pumping stations daily.
- (3) Flush sewers regularly, frequency depending on Best Professional Judgment (i.e. higher frequencies in areas more prone to impacts of fats, oils and grease).



- b. Use Collection System for Storage
  - (1) Set regulator controls to optimize storage in collection system.
  - (2) Discharges from outfall 006 (Shockoe Creek CSO) shall, to the maximum extent practicable, be minimized until the entire capacity of the Shockoe Retention Basin and the Shockoe Creek Combined Sewer has been used to store combined sewer flow for later treatment at the plant. The permittee shall measure the flow entering into and leaving the Shockoe Retention Basin daily. Such data shall be included with the monthly DMR along with an indication of days during the month that the system overflowed through outfall 006.
  - (3) Discharges from outfalls 019 (Hampton Street and Colorado) and 020 (McCloy Street Sewage Regulator) shall, to the maximum extent practicable, be minimized until the entire capacity of the Hampton/McCloy Retention System has been used to store combined sewer flow for later treatment at the plant. The permittee shall measure and include with the monthly DMR the flow entering into and leaving the Hampton/McCloy Retention System daily.
  - (4) Reline sewers for reducing I/I to the extent that such procedures prove to be effective.
  - (5) Adjust WWTP influent pumping operations during wet weather events to fill the intercepting system to the level of the lowest overflow.
  - (6) Inspect tide gates monthly and adjust and repair to control tidal intrusion as needed.
  - (7) Use public and private storm water holding facilities in CSS area.
- c. Pretreatment Program
  - (1) Use a pretreatment ordinance and program to control any industrial discharges that may be identified as impacting CSOs.
  - (2) Use a pretreatment ordinance and program to require significant industrial users discharging to the CSS to establish management practices to control batch discharges during wet weather conditions whenever possible.
  - (3) Discontinue (as determined to be necessary) discharge of water treatment plant residuals to CSS during wet weather events.
- d. Maximize Flow to the WWTP for Treatment
  - (1) To maximize treatment under combined sewer overflow conditions during the period beginning with the permit's effective date and lasting until the permit's expiration date or until the final Certificate to Operate (CTO) for the new nutrient removal technology associated with the Certificates to Construct (CTCs) issued to Contracts 1 through 5 (PTL Numbers: 24093, 24663, 24316, 24664, 25104), whichever occurs first, the permittee shall operate, to the maximum extent and duration practical, its WWTP to provide treatment to flow rates above 50 MGD.
  - (2) During the period beginning with the issuance of the final CTO for the new nutrient removal technology associated with the CTCs issued to Contracts 1 through 5 (PTL Numbers: 24093, 24663, 24316, 24664, 25104) and lasting until the permit's expiration date, the permittee shall maximize flow to the WWTP as follows.
    - i. To maximize treatment under combined sewer overflow conditions, the permittee shall operate, to the maximum extent and duration practical, its WWTP to provide treatment to flow rates above 75 MGD during normal conditions. Combined sewer overflow treatment conditions prevail on any calendar day on which the daily flow entering the Richmond WWTP exceeds the dry-weather flow by more than 30 MGD during normal conditions. These conditions also prevail on the day after any calendar day when the flow to the Richmond WWTP exceeds the dry-weather flow by more than 40 MGD during normal conditions. The permitted dry-weather flow (DWF) capacity is 45 MGD. Dry weather flow consists of sanitary sewage, industrial wastewater, and infiltration/inflow, exclusive of storm water.
      - a. The permittee shall treat retained flow to permit effluent concentration limits. When there is wastewater stored in the Shockoe and/or the Hampton/McCloy Retention Systems, the permittee shall operate as follows: When there is wastewater stored in the Shockoe Retention System, the permittee shall treat at a rate of 75 MGD to the maximum extent practical during normal conditions until the Shockoe System is empty.
      - b. When there is wastewater stored only in the Hampton/McCloy retention system, the permittee shall dewater at a rate of no less than 3.6 MGD until the Hampton/McCloy system is empty.
    - ii. Abnormal Conditions: Abnormal conditions at the WWTP shall exist when (1) process facilities are out of service; (2) the final sedimentation tank has effluent solids greater than

the value identified in the Operating and Reporting Plan for Maximizing Treatment During CSO Conditions at the WWTP; or (3) a plant upset occurs as demonstrated by the permittee in accordance with Part II.V.2 of this permit. The permittee shall operate the WWTP in accordance with the approved Operating and Reporting Plan for Maximizing Treatment During CSO Conditions at the WWTP when abnormal conditions exist. An approvable Operating and Reporting Plan for Maximizing Treatment During CSO Conditions at the WWTP shall be submitted for DEQ review and approval no later than three months after the effective date of this permit. Subsequent changes to the plan shall be subject to DEQ review and approval prior to implementation.

(3) CSO-Related Bypass

- i. A "CSO-Related Bypass" means the intentional diversion of waste streams from any portion of a treatment facility to increase the overall treatment of combined sewer overflow.
- ii. The permittee shall operate the WWTP in accordance with the approved Operating and Reporting Plan for Maximizing Treatment During CSO Conditions at the WWTP. These bypasses are not subject to the provisions of Part II.U.
- iii. The CSO-related bypass provision may be modified or terminated if there is a substantial increase in the volume or character of pollutants being introduced to the WWTP.
- vi. All wet weather flows passing the headworks of the WWTP shall receive at least primary clarification and solids and floatables removal and disposal, and disinfection, where necessary, and any other treatment that can reasonably be provided,

(4) Monitoring and Evaluation:

The Operating and Reporting Plan for Maximizing Treatment during CSO Conditions at the WWTP shall be revised to incorporate monitoring and performance assessment of the CSO-Related Bypass against predictions established as part of the LTCP. An approvable revised plan shall be submitted to the Department of Environmental Quality for review and approval within one year of the effective date of the CTO for the CSO-related bypass.

e. Eliminate Dry Weather Overflows (DWOs)

- (1) Preserve existing intercepting system diversion capacity to assure conveyance of DWF peak rates to WWTP.
- (1) Inspect and preventatively maintain (PM) diversion facilities daily.
- (2) Monitor pumping stations for DWOs daily.
- (3) Man the Shockoe Retention Facility daily for optimizing operations.
- (4) Maintain a 24-hour on call team to respond to reported DWOs.
- (5) Dry weather overflows from CSO outfalls are prohibited. Each dry weather overflow must be reported to the Department of Environmental Quality's Piedmont Regional Office as soon as the permittee becomes aware of the overflow. When the permittee detects a dry weather overflow, the permittee shall begin corrective action immediately. The permittee shall inspect the dry weather overflow each subsequent day until the overflow has been eliminated.
- (6) No new combined sewers shall be built inside or outside of the presently existing combined sewer service areas of the City, but this requirement shall not be construed to prevent the connection of new sanitary sewers to existing combined sewers for the purpose of conveying sewage to the City's treatment plant or the replacement/enlargement of existing sewer pipes for maintenance. The foregoing notwithstanding, no new connections shall be made to the combined sewers where those connections would cause overflows during dry-weather flow conditions.

f. Control Solid and Floatable Materials in CSOs

- (1) Screen flows at the Shockoe Retention Facility daily.
- (2) Maintain the wet weather flow regulators on the CSO conveyance pipelines.
- (3) Increase screen cleaning during the leaf season.
- (4) Conduct an effective leaf pickup program.
- (5) Conduct annual catch basin cleaning for and clean other basins as needed. The annual goal for catch basin cleaning is at least 40%.
- (6) Conduct regular litter cleanup programs.
- (7) Conduct a regular street sweeping and downtown sidewalk scrubbing program.

- g. Pollution Prevention
    - (1) Conduct regular public education programs with facility tours and advice on proper disposal of substances (e.g. household wastes, leaves and the use of fertilizer). Facility tours may be suspended when the United States Government's National Terrorism Advisory System announces elevated or imminent threat levels.
    - (2) Use the pretreatment program for awareness programs that encourage industrial waste reduction through recycling and improved housekeeping.
    - (3) Operate and maintain a septage receiving station.
    - (4) Enforce ordinances that prohibit entrance of any substance that may impair or damage the function and performance of collection treatment systems.
  - h. Public Notification
    - (1) The permittee shall maintain warning signs at all CSOs which are predicted to discharge more frequently than once per summer on average.
    - (2) Publish information on the City's web site pertaining to the CSO Control Program.
    - (3) Attend community meetings to inform citizens of proposed control facilities.
    - (4) Encourage local press coverage of CSO program developments.
  - i. Monitoring
    - (1) Conduct flow monitoring for calibration of the flow model of Outfall 006 (Shockoe Creek) in accordance with the April 1996 report entitled *Shockoe CSO and Dry Weather Monitoring Program Operating Plan - Phase 2*.
    - (2) Once during this permit cycle, monitor the James River for three months to ensure proper model calibration in accordance with the July 17, 1996 revised report entitled *James River Sampling Program Operating Plan* (including Addendum No. 1 dated September 1996).
    - (3) Once during this permit cycle, update the SWMM based hydraulic model created for the CSS and the CSO impact model developed for the tidal James River (PULSEQUAL). Include monitoring of overflows at Outfall 006 for not less than four storms. Monitor for CBOD<sub>5</sub>, TSS, E coli, Copper and Zinc.
2. CSS Reporting
- The permittee shall submit an annual report by March 31 of each year after the year in which the permit becomes effective to the Department of Environmental Quality's Piedmont Regional Office, covering the following information:
- a. Modeled results of the number and volume of overflows for each CSO outfall based on the measured storm event data for the previous calendar year.
  - b. Results of the Shockoe Creek and James River monitoring performed in accordance with H.1.i. above.
  - c. A summary of actions taken during the previous calendar year for meeting Part I.H.1. of this permit (Nine Minimum Controls).
3. Long Term Control Plan (LTCP)
- The permittee has submitted to DEQ a proposed LTCP in conformance with the CSO Policy. The proposed LTCP referred to as CSO Control Plan E in the Long Term CSO Control Plan Reevaluation – Final Report submitted to DEQ in January 2002 was made available for public review and comment. This control plan has been submitted by the permittee to meet state water quality standards in conformance with the Demonstration approach criteria at Section II.C.4.b of the CSO Policy. The Board has accepted the permittee's January 2002 LTCP and has approved Control Plan E as described in the LTCP subject to the Board completing its ongoing water quality standards coordination process pursuant to Section III of the CSO Policy. Implementation of CSO Control Plan E is designed to provide capture of approximately 87% volume and achieve removals of BOD and TSS that exceed the 85% rule in the average year.

Attachment A: Combined Sewer Overflow Outfalls

Outfall No.	Outfall Name	Location	Receiving Waters
002	Orleans Street Sewage Regulator	Latitude: N37°31'03.72" Longitude: W77°24'59" Orleans and Main Streets	James River
003	Nicholson Street Sewage Regulator	Latitude: N37°31'13.35" Longitude: W77°25'0.029" Nicholson and Main Streets	James River
004	Bloody Run Sewage Regulator	Latitude: N37°31'21.33" Longitude: W77°24'54.47" Main Street, southeast of 32nd Street	Gillies Creek
005	Peach Street Sewage Regulator	Latitude: N37°31'30.82" Longitude: W77°25'13.93" South of intersection of Peach and Dock Streets	James River
006	Shockoe Creek Sewage Regulator	Latitude: N37°31'51.55" Longitude: W77°25'54.16" Between Mayo's Bridge and 17th St.	James River
007	Byrd Street Sewage Regulator	Latitude: N37°32'01.83" Longitude: W77°26'10.68" Byrd Street, between 12th and 13th Streets	James River
009	7th Street Sewage Regulator	Latitude: N37°32'06.19" Longitude: W77°26'33.01" Seventh and Bragg Streets	Haxall Canal
010	Gambles Hill System	Latitude: N37°32'05.78" Longitude: W77°26'40.2" Off of Tredegar Street, west of 7th St.	Haxall Canal
011	Park Hydro Station Sewage Regulator	Latitude: N37°32'0.93" Longitude: W77°27'11.35" Tredegar Street, west of Lee Bridge	James River
012	Hilton Street Sewage Regulator	Latitude: N37°30'24.78" Longitude: W77°23'51.12" Southwest of intersection of Hilton and Salem Streets	Almond Creek
013	Maury Street Sewage Regulator	Latitude: N37°31'31.94" Longitude: W77°25'47.11" Maury and Brander Streets	Manchester Canal (Cotton Mill Creek)
014	Stockton Street Sewage Regulator	Latitude: N37°31'31.49" Longitude: W77°25'58.27" Stockton and Bedford Streets	Manchester Canal (Cotton Mill Creek)
015	Canoe Run Sewage Regulator	Latitude: N37°31'29.22" Longitude: W77°27'26.49" Next to Southern Railway Line, north of Riverside Drive and 22nd Streets	James River
016	Woodland Heights Sewage Regulator	Latitude: N37°31'26.85" Longitude: W77°27'41.13" Next to Southern Railway Line, north of Riverside Drive and 26th Street	James River
017	Reedy Creek Sewage Regulator	Latitude: N37°31'27.77" Longitude: W77°28'09.16" Next to Southern Railway Line, approx. north of Riverside Drive and 30th St.	James River

Outfall No.	Outfall Name	Location	Receiving Waters
018	42nd Street Sewage Regulator	Latitude: N37°31'32.58" Longitude: W77°28'25.25" Next to Southern Railway Line, north of Riverside Drive and 42nd Street	James River
019	Hampton Street and Colorado	Latitude: N37°31'50.53" Longitude: W77°28'30.66" New York Avenue, between Hampton Street and Meadow Avenue	James River
020	McCloy Street Sewage Regulator	Latitude: N37°32'24.32" Longitude: W77°29'41.85" McCloy Street	James River
021	Gordon Avenue Sewage Regulator	Latitude: N37°31'21.60" Longitude: W77°25'18.49" Brander Street, east of I-95	James River
024		Latitude: N37°31'23.29" Longitude: W77°24'15.12" Gilley and Varina Streets	Gillies Creek
025		Latitude: N37°31'42.41" Longitude: W77°23'37.04" Briel Street and Gillies Creek	Gillies Creek
026		Latitude: N37°31'28.67" Longitude: W77°23'58.46" 1250 ft. east of Government Road and Southern Railway Line	Gillies Creek
028		Latitude: N37°31'20.42" Longitude: W77°24'44.51" 550 ft. north of Nicholson Street on Williamsburg Road	Gillies Creek
031		Latitude: N37°32'19.29" Longitude: W77°24'1.80" Oakwood Cemetery	Stoney Run
033		Latitude: N37°32'17.43" Longitude: W77°28'35.69" Park Drive and Shields Lake	Dooleys Branch
034		Latitude: N37°31'51.67" Longitude: W77°25'40.46" 19th and Dock Streets	Richmond Dock Canal
035		Latitude: N37°31'39.03" Longitude: W77°25'21.28" 25th and Dock Streets	Richmond Dock Canal
039		Latitude: N37°31'23.94" Longitude: W77°24'17.45" 550 ft. downstream from Gillies Creek and Government Road	Gillies Creek
040	CSO-1 Outlet	Latitude: N37°31'41.2" Longitude: W77°26'23.35" 1250 ft. downstream of the Manchester Bridge and 100 ft. off of the south bank	James River

# CONDITIONS APPLICABLE TO ALL VPDES PERMITS

## A. Monitoring

1. Samples and measurements taken as required by this permit shall be representative of the monitored activity.
2. Monitoring shall be conducted according to procedures approved under Title 40 Code of Federal Regulations Part 136 or alternative methods approved by the U.S. Environmental Protection Agency, unless other procedures have been specified in this permit.
3. The permittee shall periodically calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals that will insure accuracy of measurements.
4. Samples taken as required by this permit shall be analyzed in accordance with 1VAC30-45, Certification for Noncommercial Environmental Laboratories, or 1VAC30-46, Accreditation for Commercial Environmental Laboratories.

## B. Records

1. Records of monitoring information shall include:
  - a. The date, exact place, and time of sampling or measurements;
  - b. The individual(s) who performed the sampling or measurements;
  - c. The date(s) and time(s) analyses were performed;
  - d. The individual(s) who performed the analyses;
  - e. The analytical techniques or methods used; and
  - f. The results of such analyses.
2. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years, the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or regarding control standards applicable to the permittee, or as requested by the Board.

## C. Reporting Monitoring Results

1. The permittee shall submit the results of the monitoring required by this permit not later than the 10th day of the month after monitoring takes place, unless another reporting schedule is specified elsewhere in this permit. Monitoring results shall be submitted to:  
 DEQ - Piedmont Regional Office  
 4949-A Cox Road  
 Glen Allen, VA 23060
2. Monitoring results shall be reported on a Discharge Monitoring Report (DMR) or on forms provided, approved, or specified by the Department.
3. If the permittee monitors any pollutant specifically addressed by this permit more frequently than required by this permit using test procedures approved under Title 40 of the Code of Federal Regulations Part 136 or using other test procedures approved by the U.S. Environmental Protection Agency or using procedures specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or reporting form specified by the Department.
4. Calculations for all limits which require averaging of measurements shall utilize an arithmetic mean

unless otherwise specified in this permit.

D. Duty to Provide Information

The permittee shall furnish to the Department, within a reasonable time, any information which the Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Board may require the permittee to furnish, upon request, such plans, specifications, and other pertinent information as may be necessary to determine the effect of the wastes from his discharge on the quality of state waters, or such other information as may be necessary to accomplish the purposes of the State Water Control Law. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.

E. Compliance Schedule Reports

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

F. Unauthorized Discharges

Except in compliance with this permit, or another permit issued by the Board, it shall be unlawful for any person to:

1. Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances; or
2. Otherwise alter the physical, chemical or biological properties of such state waters and make them detrimental to the public health, or to animal or aquatic life, or to the use of such waters for domestic or industrial consumption, or for recreation, or for other uses.

G. Reports of Unauthorized Discharges.

Any permittee who discharges or causes or allows a discharge of sewage, industrial waste, other wastes or any noxious or deleterious substance into or upon state waters in violation of Part II F 1; or who discharges or causes or allows a discharge that may reasonably be expected to enter state waters in violation of Part II F 1, shall notify the Department of the discharge immediately upon discovery of the discharge, but in no case later than 24 hours after said discovery. A written report of the unauthorized discharge shall be submitted to the Department, within five days of discovery of the discharge. The written report shall contain:

1. A description of the nature and location of the discharge;
2. The cause of the discharge;
3. The date on which the discharge occurred;
4. The length of time that the discharge continued;
5. The volume of the discharge;
6. If the discharge is continuing, how long it is expected to continue;
7. If the discharge is continuing, what the expected total volume of the discharge will be; and
8. Any steps planned or taken to reduce, eliminate and prevent a recurrence of the present discharge or any future discharges not authorized by this permit. Discharges reportable to the Department under the immediate reporting requirements of other regulations are exempted from this requirement.

H. Reports of Unusual or Extraordinary Discharges

If any unusual or extraordinary discharge including a bypass or upset should occur from a treatment works and the discharge enters or could be expected to enter state waters, the permittee shall promptly

notify, in no case later than 24 hours, the Department by telephone after the discovery of the discharge. This notification shall provide all available details of the incident, including any adverse effects on aquatic life and the known number of fish killed. The permittee shall reduce the report to writing and shall submit it to the Department within five days of discovery of the discharge in accordance with Part II I 2. Unusual and extraordinary discharges include but are not limited to any discharge resulting from:

1. Unusual spillage of materials resulting directly or indirectly from processing operations;
2. Breakdown of processing or accessory equipment;
3. Failure or taking out of service some or all of the treatment works; and
4. Flooding or other acts of nature.

I. Reports of Noncompliance

The permittee shall report any noncompliance which may adversely affect state waters or may endanger public health.

1. An oral report shall be provided within 24 hours from the time the permittee becomes aware of the circumstances. The following shall be included as information which shall be reported within 24 hours under this paragraph:
  - a. Any unanticipated bypass; and
  - b. Any upset which causes a discharge to surface waters.
2. A written report shall be submitted within 5 days and shall contain:
  - a. A description of the noncompliance and its cause;
  - b. The period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and
  - c. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The Board may waive the written report on a case-by-case basis for reports of noncompliance under Part II I. if the oral report has been received within 24 hours and no adverse impact on state waters has been reported.

3. The permittee shall report all instances of noncompliance not reported under Parts II I.1 or 2, in writing, at the time the next monitoring reports are submitted. The reports shall contain the information listed in Part II I.2.

NOTE: The immediate (within 24 hours) reports required in Parts II G, H and I may be made to the Department's Regional Office at (804) 527-5020 or fax (804) 527-5106. For reports outside normal working hours, leave a message and this shall fulfill the immediate reporting requirement. For emergencies, the Virginia Department of Emergency Services maintains a 24 hour telephone service at 1-800-468-8892.

J. Notice of Planned Changes

1. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:
  - a. The permittee plans alteration or addition to any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced:
    - (1) After promulgation of standards of performance under Section 306 of Clean Water Act which are applicable to such source; or
    - (2) After proposal of standards of performance in accordance with Section 306 of Clean Water Act which are applicable to such source, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal;
  - b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent



limitations nor to notification requirements specified elsewhere in this permit; or

- c. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
2. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

K. Signatory Requirements

1. Applications. All permit applications shall be signed as follows:
  - a. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulation; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;
  - b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
  - c. For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a public agency includes: (i) The chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.
2. Reports, etc. All reports required by permits, and other information requested by the Board shall be signed by a person described in Part II K 1, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
  - a. The authorization is made in writing by a person described in Part II K 1;
  - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and
  - c. The written authorization is submitted to the Department.
3. Changes to authorization. If an authorization under Part II K 2 is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Part II K 2 shall be submitted to the Department prior to or together with any reports, or information to be signed by an authorized representative.
4. Certification. Any person signing a document under Parts II K 1 or 2 shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my

direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

L. Duty to Comply

The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the State Water Control Law and the Clean Water Act, except that noncompliance with certain provisions of this permit may constitute a violation of the State Water Control Law but not the Clean Water Act. Permit noncompliance is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the Clean Water Act within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if this permit has not yet been modified to incorporate the requirement.

M. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee shall apply for and obtain a new permit. All permittees with a currently effective permit shall submit a new application at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Board. The Board shall not grant permission for applications to be submitted later than the expiration date of the existing permit.

N. Effect of a Permit

This permit does not convey any property rights in either real or personal property or any exclusive privileges, nor does it authorize any injury to private property or invasion of personal rights, or any infringement of federal, state or local law or regulations.

O. State Law

Nothing in this permit shall be construed to preclude the institution of any legal action under, or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any other state law or regulation or under authority preserved by Section 510 of the Clean Water Act. Except as provided in permit conditions on "bypassing" (Part II U), and "upset" (Part II V) nothing in this permit shall be construed to relieve the permittee from civil and criminal penalties for noncompliance.

P. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Sections 62.1-44.34:14 through 62.1-44.34:23 of the State Water Control Law.

Q. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes effective plant performance, adequate funding, adequate licensed operator staffing, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by the permittee only when the operation is necessary to achieve compliance with the conditions of this permit.

R. Disposal of Solids or Sludges

Solids, sludges or other pollutants removed in the course of treatment or management of pollutants shall

be disposed of in a manner so as to prevent any pollutant from such materials from entering state waters.

S. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

T. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

U. Bypass

1. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. The permittee may allow any bypass to occur which does not cause effluent limits to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Parts II U 2 and U 3.

2. Notice

- a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, prior notice shall be submitted, if possible at least ten days before the date of the bypass.
- b. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Part II I.

3. Prohibition of bypass.

- a. Bypass is prohibited, and the Board may take enforcement action against a permittee for bypass, unless:
  - (1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
  - (2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
  - (3) The permittee submitted notices as required under Part II U 2.
- b. The Board may approve an anticipated bypass, after considering its adverse effects, if the Board determines that it will meet the three conditions listed above in Part II U 3 a.

V. Upset

1. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limits if the requirements of Part II V 2 are met. A determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is not a final administrative action subject to judicial review.
2. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
  - a. An upset occurred and that the permittee can identify the cause(s) of the upset;
  - b. The permitted facility was at the time being properly operated; and
  - c. The permittee submitted notice of the upset as required in Part II I 2.
  - d. The permittee complied with any remedial measures required under Part II S.
3. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

W. Inspection and Entry

The permittee shall allow the Director, or an authorized representative, upon presentation of credentials

and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act and the State Water Control Law, any substances or parameters at any location.

For purposes of this section, the time for inspection shall be deemed reasonable during regular business hours, and whenever the facility is discharging. Nothing contained herein shall make an inspection time unreasonable during an emergency.

X. Permit Actions

Permits may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

Y. Transfer of Permits

1. Permits are not transferable to any person except after notice to the Department. Except as provided in Part II Y 2, a permit may be transferred by the permittee to a new owner or operator only if the permit has been modified or revoked and reissued, or a minor modification made, to identify the new permittee and incorporate such other requirements as may be necessary under the State Water Control Law and the Clean Water Act.
2. As an alternative to transfers under Part II Y 1, this permit may be automatically transferred to a new permittee if:
  - a. The current permittee notifies the Department at least 30 days in advance of the proposed transfer of the title to the facility or property;
  - b. The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and
  - c. The Board does not notify the existing permittee and the proposed new permittee of its intent to modify or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in Part II Y 2 b.

Z. Severability

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.